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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/749,297	12/31/2003	Jin-Hong Ahn	51876P540	9786

8791 7590 06/22/2005

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EXAMINER


NGUYEN, DANG T

ART UNIT	PAPER NUMBER
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2824

DATE MAILED: 06/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/749,297	AHN ET AL. 	
	Examiner	Art Unit	
	Dang T. Nguyen	2824	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 11 May 2005.  
 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-33 is/are pending in the application.  
     4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1 and 28-33 is/are rejected.  
 7) ☒ Claim(s) 2-27 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☒ The drawing(s) filed on 31 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
     a) ☒ All    b) ☐ Some \*    c) ☐ None of:  
         1. ☒ Certified copies of the priority documents have been received.  
         2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>Search history</u> .                   |

### **DETAILED ACTION**

1. This office action is in response to applicant's amendment filed on 5/11/05. Claims 1, 2, 4 – 16, 18 – 22 and 24 – 31 have been amended. Claim 3 has been canceled. Claims 1 – 2 and 4 – 33 are pending on this office action.

### ***Claim Objections***

2. Claims 18 – 23 and 25 – 27 are objected to because of the following informalities: claim 18 is depended to claim 3, but claim 3 has been canceled. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

**Claims 1 and 28 - 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamauchi, U.S. patent No. 6,009,011 – filed Dec. 24, 1997.**

**Regarding independent claim 1**, Fig. 2 of Yamauchi discloses a method for operating a non-volatile dynamic random access memory (NVDRAM) device including a plurality of memory cells (Fig. 5), each cell having a capacitor [C] and a transistor having a floating gate [FG], comprising:

preparing a power-on mode for performing a DRAM operation (Col. 11, lines 8-42); and

preparing a power-off mode for storing data included in the capacitor into the floating gate (Col. 11, lines 45-55).

**Regarding independent claim 28**, Fig. 2 and 5 of Yamauchi discloses a non-volatile dynamic random access memory (NVDRAM) device including a plurality of memory cells in a matrix (Fig. 5), each memory cell comprising:

A capacitor (Fig. [C]) for storing data; and

A transistor for transmitting the data stored in the capacitor (Fig. 2 [C]) to a bit line (Fig. 2 [BL]), wherein the transistor includes a drain, a source, and a gate having a control gate and a floating gate (Fig. 2 [FL]) for storing the data when power is off (Col. 11 lines 45 – Col. 12 lines 54); wherein one terminal of capacitor (Fig. 2 [C]) is coupled to the drain of transistor and another terminal of the capacitor (Fig. 2 [C]) is supplied with a controllable voltage (Fig. 2 [CP]) determined according to an operation mode (Col. 11 lines 15 – 33).

**Regarding dependent claim 29**, Yamauchi discloses wherein the floating transistor is made of nitride (Col. 7 lines 5 – 7)

**Regarding dependent claim 30**, Fig. 2 of Yamauchi discloses wherein the gate of floating transistor [FG] formed in a single layer serves as a data storage (Col. 7 lines 9-12).

**Regarding independent claim 31**, Fig. 2 and 5 of Yamauchi discloses a nonvolatile dynamic random access memory comprises: a plurality of memory cells in a

matrix (See Fig. 5), wherein each memory cell [MT] includes: a control gate layer (Fig. 2, control gate coupled to WL) coupled to a word line [WL]; a capacitor (Fig. 2 [C]) for storing data; and a floating transistor (Fig. 2 [FG]) for transmitting the stored data in the capacitor (Fig. 2 [C]) to a bit line (Fig. 2 [BL]) and storing the data therein in response to and operation mode, wherein one terminal capacitor (Fig. 2 [C]) a drain of the floating transistor (Fig. 2 [FG]) and another terminal of the capacitor is supplied with a controllable voltage (Fig. 2 [CP]) determined according to the operation mode (Col. 11 lines 15 – 33).

**Regarding dependent claims 32**, Yamauchi discloses wherein the control gate layer is made of metal (Col. 7 lines 19-22) and the gate of floating transistor is made of nitride (Col. 7 lines 5 – 7).

**Regarding dependent claim 33**, Fig. 2 of Yamauchi discloses wherein the gate of floating transistor [FG] formed in a single layer serves as a data storage (Col. 7 lines 9-12).

#### ***Allowable Subject Matter***

4. Claims 2 – 27 are allowed.
5. The following is an examiner's statement of reasons for allowance:

**With respect to claim 2**, in addition to other elements in each respective claim, the prior art does not teach or suggest "wherein the power-on mode further includes the steps of moving the data stored in the floating gate into capacitor; and adjusting a threshold voltage of the transistor in all of the memory cell to a first threshold voltage".

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6. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Response to Arguments***

6. Applicant's arguments filed 5/11/05 with respect to claims 1 and 28-33 have been considered but are moot in view of the new ground(s) of rejection.

### ***Prior art***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Forbes et al.	Patent No. US 6,141,248	Date of Patent: Oct. 31, 2000
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Suh	Patent No. 5,712,817	Date of Patent: Jan. 27, 1998
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### ***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within

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TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Contact Information***

9. Any inquiry concerning this communication from the examiner should be directed to Dang Nguyen, who can be reached by telephone at (571) 272-1955. Normal contact times are M-F, 8:00 AM - 4:30 PM.

Upon an unsuccessful attempt to contact the examiner, the examiner's supervisor, Richard Elms, may be reached at (571) 272-1869.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist, whose telephone number is (703) 305-3900. The faxed phone number for organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the Status of an application may be obtained from the patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you

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have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or [EBC@uspto.gov](mailto:EBC@uspto.gov).

Dang Nguyen 6/13/2005

A handwritten signature in black ink, appearing to read "Anh Phung". The signature is fluid and cursive, with the first name "Anh" and the last name "Phung" clearly distinguishable.

**ANH PHUNG  
PRIMARY EXAMINER**